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UNIVERSITY OF PENNSYLVANIA

THE SCHOOL OF ARCHITECTURE offers full professional training in a FOUR-YEAR COURSE leading to the degree of B.S. in Architecture. An option is allowed in ARCHITECTURAL ENGINEERING. The GRADUATE YEAR grants a Master's degree, allowing specialization in advanced work. ADVANCED STANDING is granted to college graduates. Qualified DRAFTSMEN, desiring advanced technical training, are admitted without examination to the TWO-YEAR SPECIAL COURSE leading to a Certificate of Proficiency, and technical studies only may be taken by other persons of approved fitness. ILLUSTRATED ANNUAL sent on application. For FULL INFORMATION address Dr. J. H. Penniman, Dean, College Department, University of Pennsylvania, Philadelphia, Pa.

ARCHITECTURAL CRITICISM.

IT is seldom enough that we find college buildings designed at the present time in the simple, clean and dignified manner of the State Normal College, Albany, (plates cvi, cvii), begun by the late G. L. Heins, during his incumbency of the position of State Architect, and completed by Albert R. Ross. The group shows no loss of character due to the change.

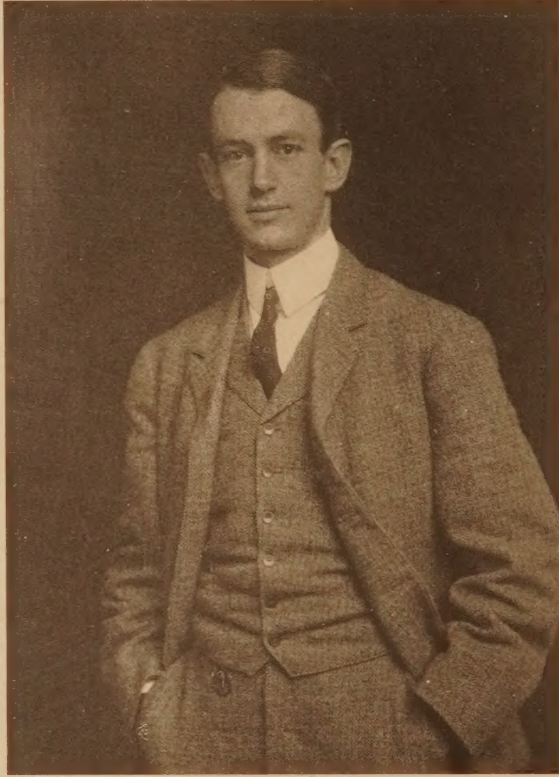
The Colonial style of these buildings is one used far too rarely in our college buildings and where it has been employed the results have been unusually successful. The University of Virginia is, of course, an old stand-by in this style. The Sweet Briar Institute follows the type of the University of Virginia very closely and with marked success. The Tome Institute is also of this character and while not ranking as high as the other two is still a worthy and distinguished piece of work. While there are very likely other groups in the Colonial style which rank as high as these, they do not present themselves so readily to the mind; to these, in future, will be added the State Normal College.

The group is not as large as any of the others, and I do not know whether it is intended to form part of a larger group or to be complete in itself, but it has that rare quality of being both complete in itself and susceptible of enlargement. The central building dominates those at either side sufficiently to insure unity in the composition as it now stands, or as it would be were other two-story buildings added extending toward the front.

The method in which the wings of the main buildings are dropped at once to the height of the buildings is admirable, and while the central motive of a double pediment is not in itself a very happy one it is here more successfully handled than in most other cases. A better arrangement of the center building, to my mind, would have been to have treated the third story of the Administration Building as an attic. However, the white panels between the windows in the second and third stories carry the line of the other buildings through, and avoid the complication of the window heights inherent to compositions where a wide entablature is carried between stories. The colonnades connected with the buildings are well placed and agreeable in themselves, while the secondary buildings they connect with on either side of the central mass are excellent. The cleverness of the designers is well illustrated in their ability to balance a one-story building with one of two stories without loss with quality of design.

The detail throughout is restrained, fresh and crisp. The whole group is remarkable not only for the excellence of its design, but for its avoidance of the errors of dryness and archeology which are far too common in modern work founded on Georgian.

NOT once in a thousand times does an architect have an opportunity to set a commercial building upon a site as is given the Metropolitan Life Insurance Company's building, San Francisco, Cal., N. Le Brun & Sons, architects, (plates cviii, cix). When such an opportunity does occur it is indeed delightful to see it so worthily used. The parent building of the Metropolitan Life Insurance Co., by the same architects, can only be admired with reserve, but of this branch office criticism fails. The motive is excellent and its execution is on the plane of the opportunity and the motive. The material is terra cotta with the frieze in rich color. The design of the frieze is one of extraordinary merit, for although it is highly enriched, this has been done without destroying the strong lines of the structure. The tremendous openings indicate ample light to the offices within, yet by the use of engaged columns and a narrow window architrave, the sense of stability, so important in every design, is completely preserved. The terraces and retaining walls are well handled and enable this square building, almost block-like in the simplicity of its proportions, to build up from the



Architects of To-Day.

MR. FREDERICK SQUIRES, NEW YORK.

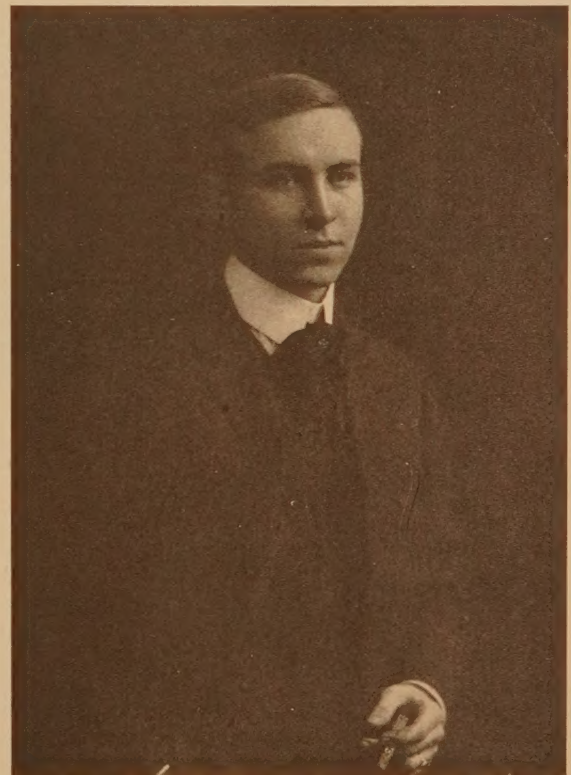
ground in the way all buildings should. That is, it is distinctly built up from the site and not set down upon it.

THERE has been so much written and said about the New Theatre, Carrere & Hastings, Architects, (plates cxi, cxii, cxiii, cxiv), that criticism of it is unnecessary. The exterior, although in many ways attractive, is by no means completed, and possibly it would be better to reserve a final judgment on it until this is done. As compared with the exquisite perspective which formed one of the competition drawings, it is disappointing, the detail lacking refinement which was the remarkable feature of that drawing. The capitals especially have lost in appearance, being blocky and rather coarse, and the treatment of the drum in the attic over the corner pavilion is far from satisfactory. The building as a whole does not seem to hang together as well as might have been expected; the reason for this is very difficult to tell, but such is the impression which both casual observation and fairly close examination give. Unquestionably, the appearance will be tremendously improved when the contemplated carvings are executed. How far these will aid in the refining of the design cannot at this moment be said, but that the exterior is disappointing to most architects familiar with the competition drawings cannot be denied. Not that the building is badly designed; the contrary is the case; but the competition drawings were so exquisite and showed a building of such tremendous merit that we were prepared to see here in New York the most beautiful theatre in the world, and as is often the case with great expectations, we have been disappointed.

The interior is another matter. Exceedingly rich both in form and in color, it houses properly America's greatest

effort toward the advancement of the drama. The interior of any theatre is necessarily a very difficult problem, as the spaces below and between the galleries are of irregular and curious shapes, and the top of the proscenium arch is far below the highest point of the upper balcony. This renders a ceiling treatment which not only is, but appears to be logical, almost impossible. Here it has been exceedingly well handled, and indeed the whole treatment of the interior is probably as good a one, from the pictorial effect, as there is in any theatre in the world. Everyone will find in it certain details with which he personally does not agree, but that this is due to individual questions of taste, and that the interior, as a whole, is of surpassing beauty will not be denied. The arrangements for entrance and exit are wonderfully complete, so much so, indeed, that they almost defeat their own purposes by confusing the mind as to which is the easiest way of egress. Nevertheless, the crowds can be managed with as little confusion and delay as is possible in a building of this size. The main foyer (a feature which except in name is new to American theatres) is exquisite, the ceiling treatment being really wonderful. In the auditorium the details of the proscenium arch and of the state boxes are also very lovely.

There are very many firms, both of architects and of decorators, who can splash what money will buy all round the interior and get an effect stunning and gorgeous, but when it comes to a question of combining gorgeousness with refinement and good taste, there are few whose work is in a class with that of this theatre. Sumptuous in the extreme it is still refined, and while gay, as befits the home of light opera, still has the dignity which is essential to the performance of serious drama.



Architects of To-Day.

MR. JOHN WYNKOOP, NEW YORK.

IN searching for a type of architecture which would give maximum window sizes and preserve the appearance of strength essential to good design, Mr. Snyder, the School House architect of New York, chose an English style of the late Tudor or early Renaissance. Cram, Goodhue & Ferguson have built in Boston one or two apartment houses in the same style, and recently there have been a number erected in New York along similar lines. The style is one excellently adapted to its purpose and the surprising thing is that its advantages were not sooner appreciated by those of our architects who have been designing apartment houses. One of the best is the Britannia Apartments, (plate cx), Waid & Willauer, architects, illustrated in this number. The scheme is a good one not alone from the point of view of light, but permits a more logical development of the court than is possible in any other style. Compare, for example, this building with the "Dorilton," a structure of exaggerated French tendencies in which a similar motive is employed, and the point I seek to make is at once apparent.

In any apartment house plan bow windows are, from the point of view of the renting agent, essential, and while an architect must deplore the breaking up of a wall surface by the uneasy lines resulting from them it is one of those points where architectural considerations must give way to commercial ones. Certainly, bow windows can be used with far more propriety in a building derived from Gothic motives than in one whose genesis is Classic.

Another unfortunate feature about apartment house design (and to some extent the same thing is true of office buildings) is that there is no floor less important than the others. All must be given the maximum of light in order to rent well. For that reason the upper stories of this building and of all others in which this commercial principle is apparent, seem somewhat over scaled. We are so accustomed to seeing the windows in the upper stories treated differently from those in the lower, that where the same size is used throughout, the upper windows seem larger than the lower. One fault this building has which might have been avoided. The windows are too wide for their height. Small mullions on all stories from the top to the bottom would have improved the design without injuring the light to any appreciable extent. On the whole, however, the building is designed with candor and executed with refinement. More such buildings would raise the standard of the apartment houses far beyond its present plane.

HOUSING MOVEMENT IN ENGLAND.

SCHUYLER M. MEYER.

THERE has never been any question of the close connection between the housing problem and many of the social evils in the present day. The facts set forth illustrate clearly the tragedy of one and the gross inadequacy of two-roomed houses. There are to-day, in England and Scotland, about 500,000 persons with houses of one room only, and 2,500,000 with houses of two rooms only. From this, one may obtain an idea of the evil and its bearing and effect on the efficiency and health of the British people. It is this evil that the co-partnership housing movement is doing so much to remedy.

One of the most beautiful examples of this movement is the "Hampstead Tenants" just outside of London. Here was devised a scheme for building houses which should not only themselves represent the best work that could be ob-

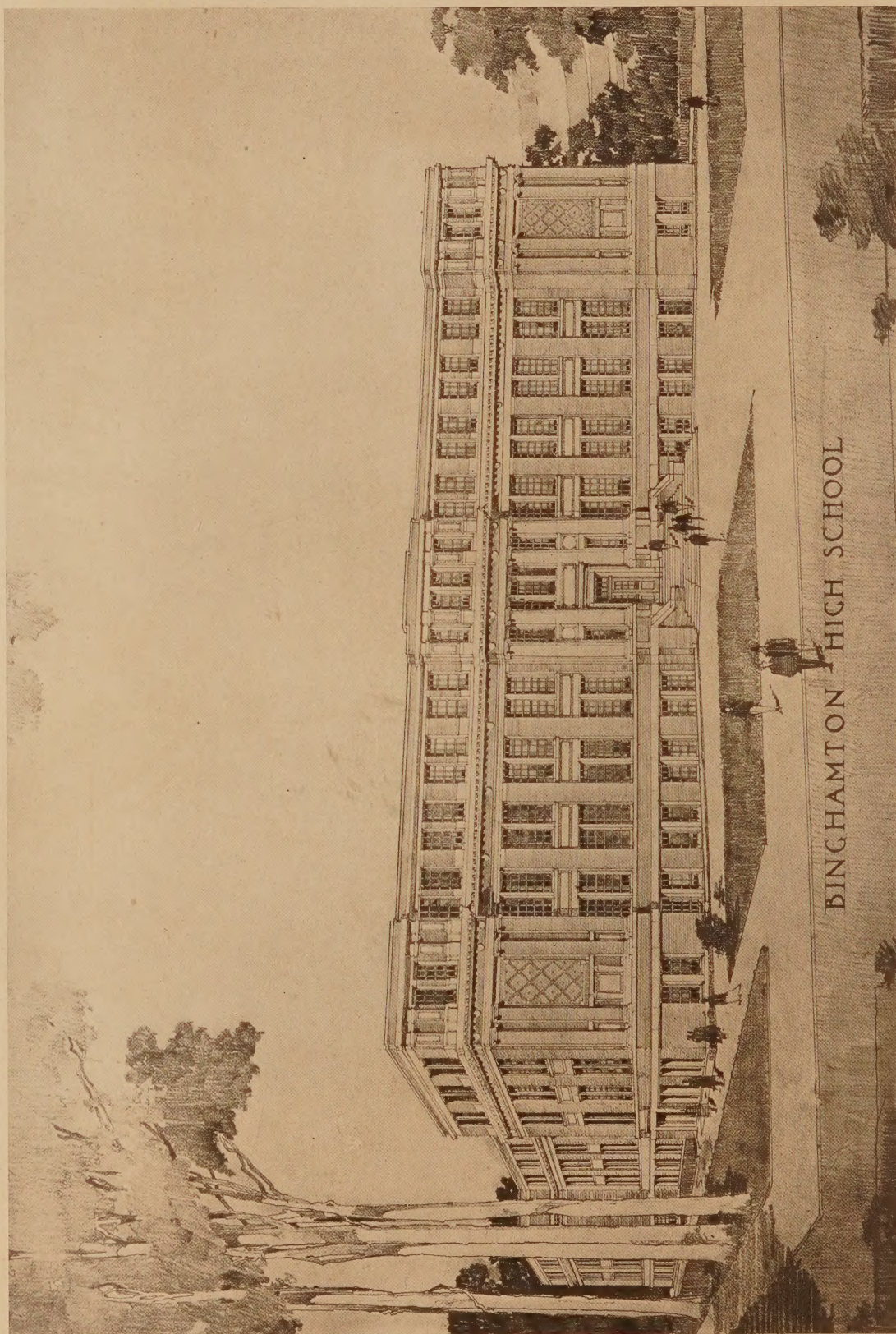
tained, but be designed and grouped in proper relation to one another so that each should form part of a well-considered plan for making the streets as well as the houses beautiful. With regard to the actual building of the houses, the company saw that it could only hope to effect economies by employing, not only a well-known reliable firm, but one accustomed to building on a large scale as best adapted to getting the most thorough and efficient work out of its men. But large builders will not tender for one or two small houses, and for the reasons already stated the small builder is out of the question. But this barrier did not hinder the Hampstead Tenant, Ltd. They hit upon the excellent and businesslike plan of asking for bids on the basis not of building a house or two but of undertaking \$200,000 worth of work which was sufficient to entice the larger builder.

These bids were from some of the largest and best known building firms in England. In all probability none of the firms would have bothered to put in bids for one or two houses, and in any case the rate would have been much higher than the lowest shown on the schedule. It might seem that building on such a large scale would tempt the builder and workmen to put in poor materials and workmanship; but so carefully does the society watch the progress of the work, and so thoroughly was the task of selecting competent workmen carried out that the society required the discharge of over 2,000 workmen who showed undesirable tendencies, on the principle that for a fair day's pay the artisan should return a good day's work of his hands and head. The result shows the wisdom of this principle in that the yearly repairs required are far less than the average house constructed on similar lines.

The society from the outset made it obligatory that not more than twelve houses should, on the average, be built to the acre, and that a large proportion of the estate should be reserved for open spaces and playgrounds. Another stride forward in the health precaution is the abolition of the garden wall. The addle-pated repetition of the suburban garden walls is done away with and with the walls the mortar-dust, cobwebs and rubbish corners they cause. In their place, as boundary lines, are grown hedges and bushes. Wherever practicable the houses are built with a southern aspect, thus allowing them to get the benefit of every ray of sunshine, and where this is impossible the principle is applied to the architectural arrangement of rooms and windows. Every house has electric light or gas, water and a bath. The house rents run from \$1.50 a week (imagine a five-room house with bath at \$1.50 per week) to \$400 a year. This varying in the rent does much towards preventing segregation of classes, an evil encountered everywhere in the cities and which the society does much to oppose.

A summary of the first complete annual report of the Hampstead Tenants Society discloses some interesting facts of the progress of the movement. This company was registered March 18, 1907. The first sod was turned on May 2, 1907. One hundred foundation stones were laid by the first hundred shareholders on June 5, 1907. The first pair of houses were opened by the Lord Mayor of London, October 2, 1907. On December 31, 1907, 17 houses were occupied and 38 more building. On December 31, 1908, there were 132 houses occupied and 48 more in different stages of construction. The expenditure on houses

(Continued page 181)



BINGHAMTON HIGH SCHOOL

PERSPECTIVE, HIGH SCHOOL, BINGHAMTON, N. Y.

Squires & Wynkoop, Architects.

(Continued from page 179)

completed and in progress, shown on the report of 1907, was \$65,670. On December 31, 1908, it was \$318,235, or an increase of \$252,965. In 1908 the paid-up share capital increased from \$17,085 to \$72,875, and the loan stock from \$33,500 to \$109,950, together making a total at the end of the year of \$182,825 or an increase during the year of \$132,590. The revenue from the rents in 1907 was \$240. For the year 1908 it was \$8,305. This steadily increases with the progress of the building, the houses being tenanted as quickly as completed. A total rent from 132 houses of \$8,305 to the American builder seems ridiculously small, a little over \$64 a year per house. Yet after meeting all expenses, which should be debited against the revenue account, including interest on loan stock, there was a profit balance of \$2,695, from which the board recommended that a dividend of 5 per cent. on share capital be paid from the commencement of the company or society, as it is called, amounting to \$1,927.90.

The Hampstead Tenants Company is but an example of the sound businesslike way in which the movement is conducted.

CHEAP COTTAGE-BUILDING.

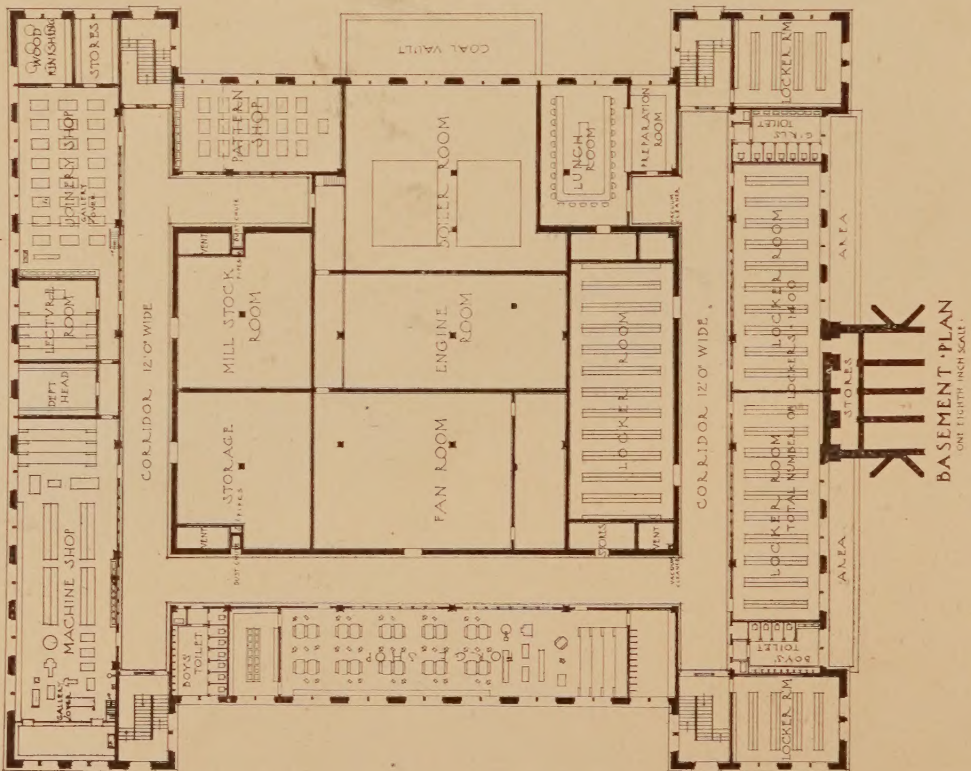
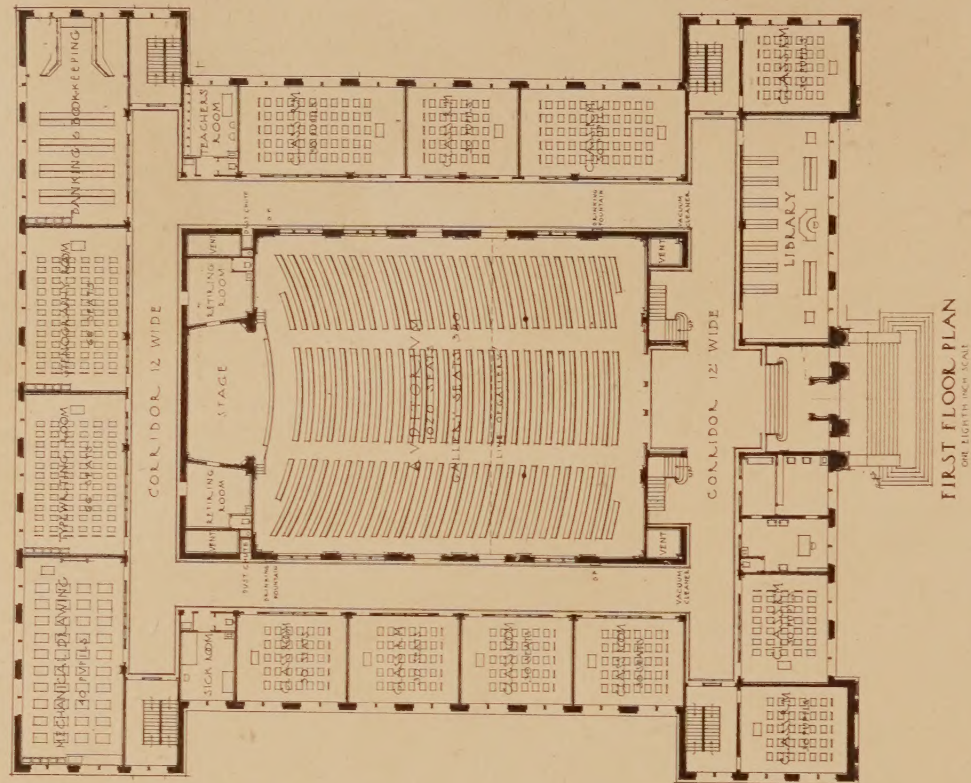
DURING recent years few subjects have had more attention devoted to them amongst architects than that of building exceedingly cheap cottages for the agricultural laborer. The problem has been to erect something which is structurally sound, lasting, and weather-tight. Among the methods proposed, a good deal of prominence has been given to concrete block building. Recently we had the opportunity of inspecting a row of cottages having walls of concrete blocks, and stairs, floors, and even a flat roof all of concrete. It may be said at once that they are exceedingly ugly. They have been built in a row, and look like nothing better than a long square box, with holes for the doors and windows, having all the appearance of a child's dolls'-house of the most elementary type. Compactly planned, they let only to a low class of tenants, for certain reasons which are easily to be found, some of which can be overcome and some not without incurring additional expense in building. The accommodation is, of course, restricted, but it is sufficient for small tenement cottages. If they could have been built independently or in pairs, each with a piece of garden in front, they would have been much more attractive, while very little skill need have been employed to improve the elevation; probably a simple band would have been sufficient, combined with the use of eaves instead of a parapet. Internally, the landlord has made the mistake of failing to paper the rooms, leaving the walls absolutely bare—not even colored or plastered—so that they have an uncomfortable appearance. Plastering is apparently not necessary, the blocks fitting closely together, and although the surface is not an ideal one for papering upon, still papering is possible, and it has been attempted by the tenants in one or two cases, the gain in appearance being considerable.

On the score of first cost, it is clear that these cottages have been economical. They have been erected in a part of the country where neither stone nor brick could be obtained without the expense of cartage for a considerable distance, whereas the site itself provided ample gravel and sand from a rising hill at the back, so that all that had to be imported was cement, while the labor required was of that

unskilled character which is easily obtainable in country districts at a low rate. One block-making machine, of course, sufficed for the whole row of cottages: its cost would be negligible under such circumstances.

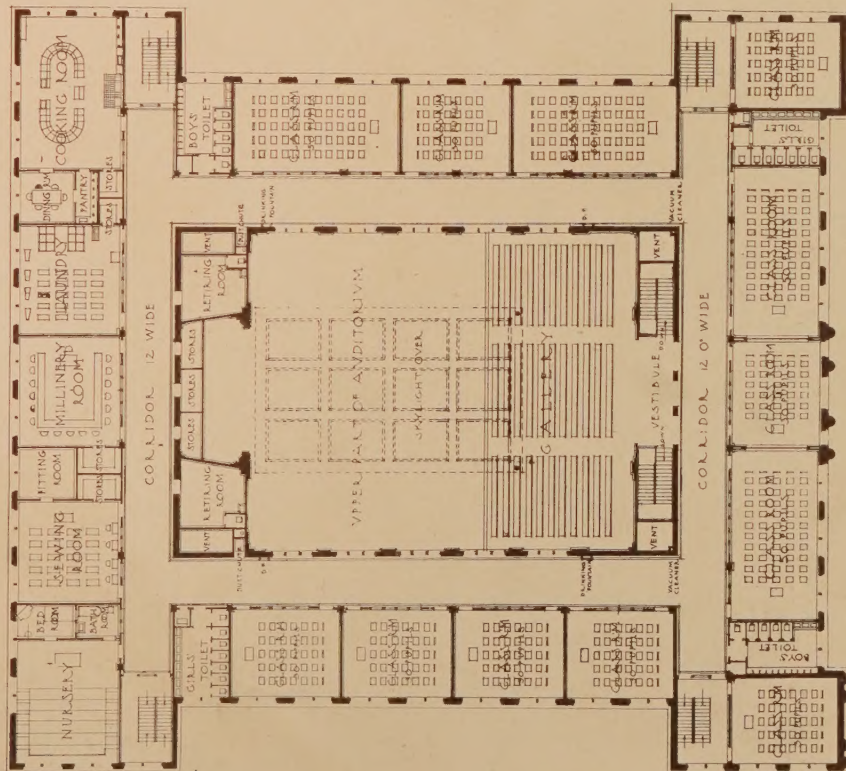
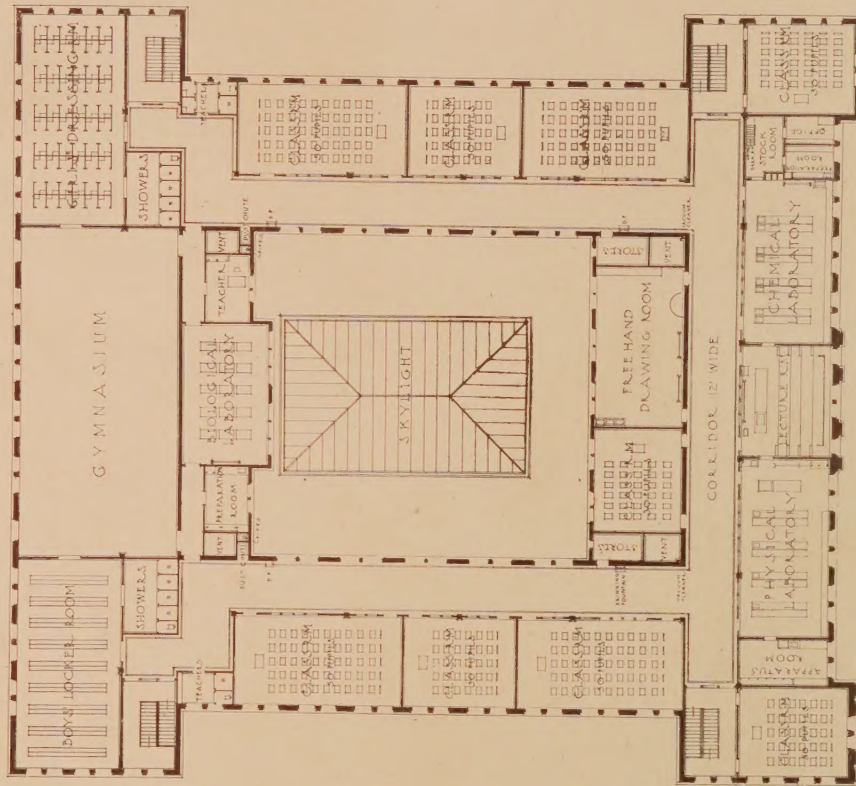
On the other side of the account it may be noticed that the repairs bill is likely to be a heavy one. A roof merely cemented over almost invariably leaks. This has happened, and it is now being attempted to rectify this difficulty by applying to it a coat of tar; but the permanence of the remedy is more than doubtful. Efflorescence has appeared upon the walls both externally and internally; but it is not apparent whether this is due to the cement in the blocks or to the use of ordinary lime mortar in the joints. At any rate, the effect is distressing; it gives a dilapidated appearance to the buildings which must militate considerably against their letting possibilities. Internally, it precludes papering. The stair treads are wearing badly, particularly at the nosings; in fact, these have chipped off so badly and in such a short period that the stairs put up in the cottages most recently built have been constructed of timber in the old-fashioned way. The floors, too, are wearing into holes, as might very well have been expected where the tenants are too poor to cover them with carpets, and where the inhabitants are agricultural laborers who wear heavy hobnailed boots. This is particularly noticeable on the ground floor. The tenants say that the floors are cold to the feet, and that the houses themselves are cold in winter and hot in summer. They also complain that the uncovered cement of the floors, ceilings, and walls is constantly rubbing off, causing a much greater amount of dust to lie about than is to be found in the normal house, and that, consequently, the labor of keeping these cottages clean is excessive.

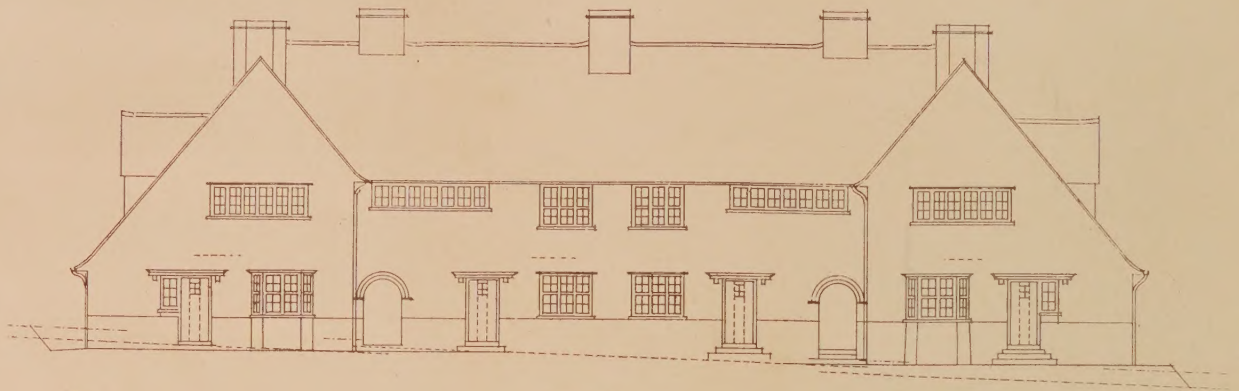
This long list of defects is somewhat startling at first sight, giving the impression that concrete building is, after all, not the solution of the cheap-cottage problem; but if one inquires a little further one soon finds that each defect has an easily applied remedy. The concrete blocks are suitable enough for the walls, particularly if they are made hollow, and set in cement instead of lime mortar. Internally, they need to be papered, when they cease to give off dust, the surface being no longer constantly rubbed, while the ceilings should, of course, be whitened. The stairs should be made of wood instead of concrete, as has already been said, while the upper floors are best constructed of wood also, any little difficulty there may be in inserting the joists into walls made of blocks being overcome by corbelling rather than by inserting the ends of the joist into the walls. The ground floor, properly of concrete, ought to be covered with flag-stones or tiles, instead of having mere cement rendering; while the cheapest form of flat roof having watertight qualities would probably be one of timber joists boarded and asphalted or covered with tarred felt, properly ceiled underneath. It is almost certainly the solid character of this concrete roof which makes the cottages cold in winter and hot in summer; but the provision of a space, such as there would be in a flat roof constructed like that which is suggested, would overcome this defect. These little alterations would add to the cost to a certain small extent; but they would reduce the necessary repairs to a minimum, and render the houses much more habitable, and, consequently, much more attractive to a respectable class of tenants. To give the cheap cottage a real test it ought to be attractive in itself, both externally and internally.



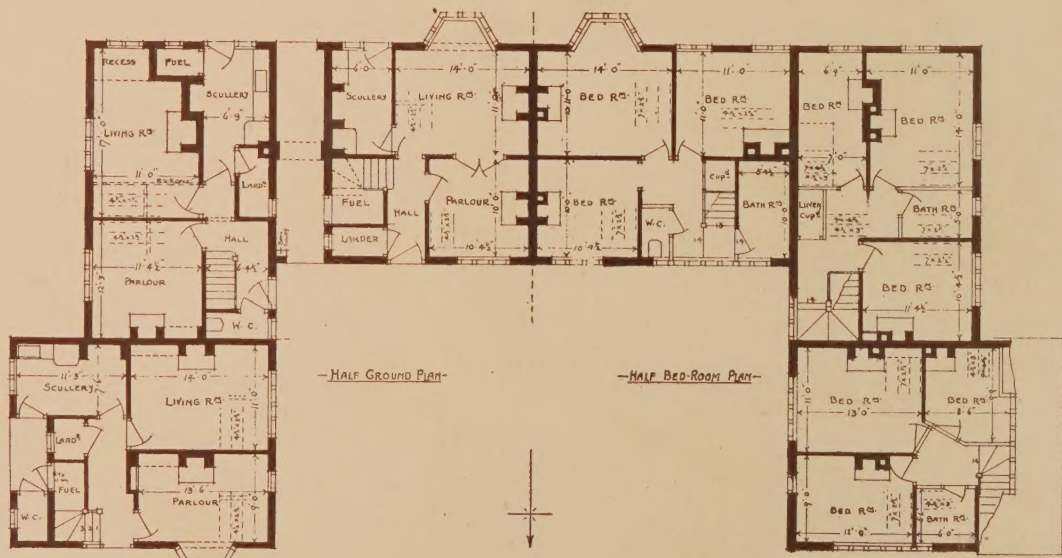
Squires & Wynkoop, Architects.

PLANS (FOR ESTIMATE), HIGH SCHOOL, BINGHAMTON, N. Y.



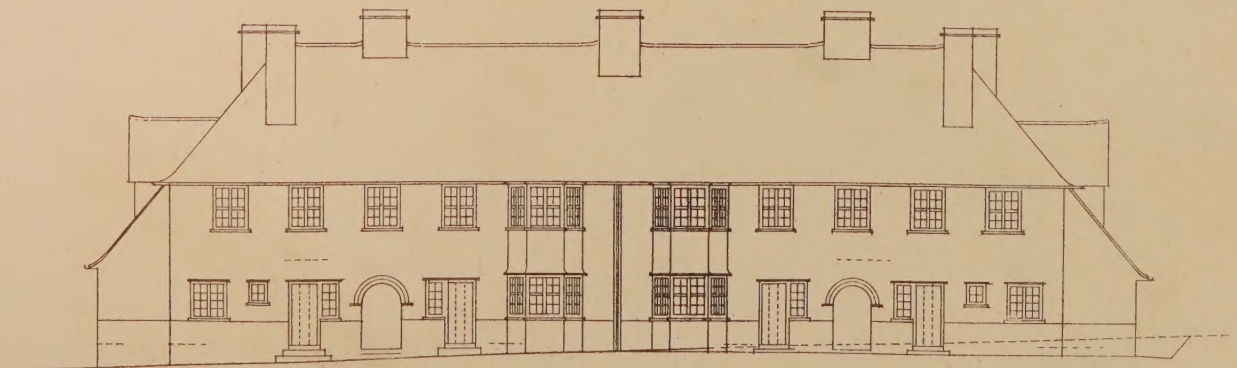


- FRONT ELEVATION -



- HALF GROUND PLAN -

- HALF BED-ROOM PLAN -



- BACK ELEVATION -



Group of Tenements, Temple Fortune Hill.



Group of Houses, Linnel Close.



Hampstead Way.



Aspens Place.



EXTERIOR AND INTERIORS, PRIVATE HOUSE, HAMPTSTEAD GARDEN SUBURB, NEAR LONDON, ENG

Parker & Unwin, Architects.

TRIBUTE TO CHARLES F. MCKIM.

FRRIENDS and associates of the late Charles Follen McKim gathered Tuesday afternoon, November 23, in the New Theatre to pay tribute to his memory. Representatives of fourteen organizations were on the stage. George B. Post presided.

Addresses were made by Joseph H. Choate, Robert Peabody, Elihu Root and Walter Cook, and short expressions of appreciation were read by Professor H. Langford Warren, who represented Harvard University; Josiah H. Benton, the Boston Public Library; Nicholas Murray Butler, Columbia University; and John Cadwalader, the New York Public Library. Professor William M. Sloane, of Princeton University, read resolutions.

The text of the resolutions, as read by Professor William M. Sloane, was, in part, as follows:

"Fourteen associations, artistic, technical and literary, here unite to commemorate the distinction of Charles Follen McKim as a citizen, as a craftsman and as an artist. To this end they join in recording these convictions.

"His life was an example of that which a creative architect must imperatively choose. His secondary training completed, he devoted ten years to his professional education, five to that of discipline and five to that of knowledge. He was stimulated to great thoughts and he had acquired the power to express them.

"His genius was exhibited in his supreme power of collaboration; he linked his work and fame inseparably with those of his two original partners, primarily for the sake of comprehensive mastery, but thus incidentally for the perfecting of achievement by each singly as well as by all in combination.

"His choice of style was predetermined by ancestry, temperament and training, for his soul was akin to that highest form of civilization which is marked by dignity, repose and proportion. As the great painter elaborates on the basis of strong drawing, whether of brush or pencil, so this great architect imagined and used structure that was itself poetic, the degree of elaboration and ornament being determined by adaptation to use and environment."

SELF-EDUCATION

An address delivered by Claude Bragdon, F.A.I.A., before the Boston Architectural Club.

I TAKE great pleasure in availing myself of this opportunity to talk to you on certain aspects of the art which we practice. I do not forget, and I hope that you sufficiently remember, that the architectural future of this country lies in the hands of just such men as you. Let me dwell, then, for a moment on your unique opportunity. Perhaps some of you have taken up architecture as you might have gone into trade, or manufacturing, or any of the useful professions; in that case you have probably already learned discrimination, and now realize that in the cutting of the cake of human occupations you have drawn the piece which contains the ring of gold. The cake is the business and utilitarian side of life, the ring of gold is the esthetic, the creative side. Treasure it, for it is a precious and enduring thing. Think what your work is: to reassemble materials in such fashion that they become instinct with a beauty and eloquent with a meaning which may carry inspiration and delight to generations still unborn. Immortality haunts your threshold, even though your hand may not be strong enough to open to the heavenly visitor. Of Captains of Industry you are the

captains; by the very nature of your calling you are not privates in the ranks, but officers of staff. Though the profession of architecture is a noble one in any country and in any age, it is particularly rich in inspiration and in opportunity here and now, for who can doubt that we are about to enter upon a great building period? We have what Mr. Sullivan calls "the need and the power to build," the spirit of great art alone is lacking, and that is already stirring in the secret hearts of men, and will sooner or later find expression in objective and ponderable forms of new beauty. These it is your privilege to create, May the opportunity find you ready! There is a saying, "To be young, to be in love, to be in Italy!" I would paraphrase it thus: To be young, to be in architecture, to be in America. It is my purpose to-night to outline a scheme of self-education, which if consistently followed out I am sure will help you, though I am aware that to a certain order of mind it will seem highly mystical and unpractical. If it commends itself to your favor I shall be glad; there is no harm in stating it, at all events. Many of you will have had the advantage of a thorough technical training in your chosen profession; be grateful for it. Others, like Topsy, "just grew"—or have just failed to grow. For the solace of all such—without wishing to be understood to disparage architectural schooling, which is growing increasingly excellent and increasingly necessary—I would say that there is a kind of education which is worse than none, for by filling his mind with ready-made ideas it prevents a man from ever learning to think for himself; and there is another kind which teaches him to think, indeed, but according to some arbitrary method, so that his mind becomes a canal instead of a river, flowing in a predetermined and artificial channel, and unreplenished by the hidden springs of the spirit. The best education can do no more than to bring into manifestation that which is inherent; it does this by means of some stimulus from without—from books and masters—but the stimulus may equally come from within; each can develop his own mind, and in the following manner: The alternation between a state of activity and a state of passivity, which is a law of our physical being, as is a law of all nature, is characteristic of the action of the mind as well. Observation and meditation are the two poles of thought. The tendency of modern life and of our active American temperament is towards a too exclusive functioning of the mind in its outgoing state, and this results in a great cleverness and a great shallowness. It is only in moments of quiet meditation that the great synthetic, fundamental truths reveal themselves. Observe ceaselessly, weigh, judge, criticize—this order of intellectual activity is important and valuable—but the mind must be steadied and strengthened by another and a different process. The power of attention, the ability to concentrate, is the measure of mental efficiency, and this power may be developed by a training exactly analogous to that by which a muscle is developed, for mind and muscle are alike the instruments of the silent Thinker who sits behind. The mind is an instrument of something higher than the mind; here is a truth so fertile that in the language of Oriental imagery, "If you were to tell this to a dry stick, branches would grow, and leaves sprout from it." There is nothing original in the method of mental development here indicated; it has been known and practiced for centuries in the East, where life is less strenuous than it is with us. The method consists in silent meditation every day at stated periods, during which

(Continued page 191)



Laneside.



The Stephens Cottage.



Howard Memorial Hall.



Interior, The Stephens Cottage.

(Continued from page 189)

the attempt is made to hold the mind to the contemplation of a single image or idea, bringing the attention back whenever it wanders, killing each irrelevant thought as it arises, as one might kill a rat coming out of a hole. This turning of the mind back on itself is difficult, but I know of nothing that "pays" so well, and I have never found anyone who conscientiously practiced it who did not confirm this view. The point is, that if a man acquires the ability to concentrate on one thing, he can concentrate on anything; he increases his competence on the mental plane in the same manner that pulling chest-weights increases his competence on the physical. The practice of meditation has moreover an ulterior as well as an immediate advantage, and that is the reason it is practiced by the Yogis of India. They believe that by stilling the mind, which is like a lake reflecting the sky, the Higher Self communicates a knowledge of Itself to the lower consciousness. Without the working of this Oversoul in and through us we can never hope to produce an architecture which shall rank with the great architectures of the past, for in Egypt, in Greece, in Mediæval France, as in India, China, and Japan, mysticism made for itself a language more eloquent than any in which the purely rational consciousness of man has ever spoken. We are apt to over-estimate the importance of books and book-learning. Think how small a part books have played in the development of architecture. Indeed, Palladio and Vignole, with their hard-and-fast formulæ, have done the art more harm than good. It is a fallacy that reading strengthens the mind—it enervates it; reading sometimes stimulates the mind to original thinking, and *this* develops it; but reading itself is a passive exercise, because the thought of the reader is for the time being in abeyance, in order that the thought of the writer may enter. Much reading impairs the power to think originally and consecutively. Few of the great creators of the world had use for books, and if you aspire to be in their class you will avoid the "spawn of the press." The best plan is to read only great books, and, having read for five minutes, think about what you have read for ten. These exercises, faithfully followed out will make your mind a fit vehicle for the expression of your idea; but the advice I have given is as pertinent to anyone who uses his mind as it is to the architect. To what, specifically, should the architectural student devote his attention in order to improve the quality of his work? My own answer would be that he should devote himself to the study of music, of the human figure, and to the study of nature "first, last, midst, and without end." The correlation between music and architecture is no new thought; it is implied in the famous saying that architecture is frozen music. Vitruvius considered a knowledge of music to be a qualification of the architect of his day, and if it was desirable then it is no less so now. There is both a metaphysical reason and a practical one why this is so. Walter Pater, in a famous phrase, declared that all art constantly aspires to the condition of music, by which he meant to imply that there is a certain rhythm and harmony at the root of every art, of which music is the perfect and pure expression; that in music the means and the end are one and the same. This coincides with Schopenhauer's theory about music, that it is the most perfect and unconditioned sensuous presentment known to us of that undying *will-to-live* which constitutes life and the world. Metaphysics aside, the architect should hear as much good music as he can, and learn the rudiments of harmony, at least to the extent of knowing

the simple numerical ratios which govern the principal consonant intervals within the octave, so that, translating these ratios into intervals of space expressed in terms of length and breadth, height, and width, his work will "aspire to the condition of music." There is a metaphysical reason, too, as well as a practical one, why an architect should know the human figure. Carlyle says, "There is but one temple in the world, and that is the body of man." If the body is, as he declares, a temple, it is no less true that a temple, or any work of architectural art, is in the nature of an ampler body which man has created for his uses, and which he inhabits, just as the individual consciousness builds and inhabits its fleshly stronghold. This may seem a highly mystical idea, but the correlation between the house and its inhabitant, and the body and its consciousness is everywhere close, and is susceptible of infinite elaboration. Architectural beauty, like human beauty, depends upon a proper subordination of parts to the whole, a harmonious interrelation between these parts, the expressiveness of each if its functions, and when these are many and diverse, their reconciliation one with another. This being so, a study of the human figure with a view to analyzing the sources of its beauty cannot fail to be profitable to the architectural designer. Pursued intelligently, such study will stimulate the mind to a perception of those simple yet subtle laws, according to which Nature everywhere works, and it will educate the eye in the finest known school of proportion, training it to distinguish minute differences, in the same way that the hearing of good music cultivates the ear. It is neither necessary nor desirable to make elaborate and carefully-shaded drawings from a posed model; an equal number of hours spent in copying and analyzing the plates of a good art anatomy, supplemented with a certain amount of life-drawing, done merely with a view to catch the pose, will be found to be a more profitable exercise, for it will make you familiar with the principal and subsidiary proportions of the bodily temple, and give you sufficient data to enable you to indicate a figure in any position with fair accuracy. I recommend the study of nature because I believe that such study will assist you to recover that direct and instant perception of beauty, our natural birthright, of which oversophistication has so bereft us that we no longer know it to be ours by right of inheritance from that cosmic matter endowed with motion out of which we are fashioned, proceeding ever rationally and rhythmically to its appointed ends. We are all of us participators in a world of concrete music, geometry, and number—a world that is so mathematically constituted and co-ordinated that our pigmy bodies, equally with the farthest star, throb to the music of the spheres. The blood flows rhythmically, the heart its metronome the moving limbs weave patterns the voice stirs into radiating sound-waves that pool of silence which we call the air.

Thou canst not wave thy staff in air,
Or dip thy paddle in the lake,
But it makes the bow of beauty there,
And ripples in rhyme the oar forsake.

The whole of animate creation labors under the exquisite necessity of being beautiful. Everywhere it exhibits the perfect adaptation of means to ends and the expression both of the means and the ends. Nature is the workshop in which are built *beautiful organisms*. This is exactly the aim of the architect—to fashion beautiful organisms. What better school, therefore, could he have in which to learn his trade? To study Nature it is not necessary to go out into the fields and botanize, nor to attempt to make water colors of pictur-

esque scenery. These things are very well, but not so profitable to your particular purpose as observation directed towards the discovery of those simple yet subtle laws which determine form and structure, such as the tracing of the spiral line, not alone where it is obvious, as in the snail's shell and in the ram's horn, but where it appears obscurely, as in the disposition of leaves or twigs upon a parent stem. Such laws of nature are equally laws of art, for art is nature carried to a higher power by reason of its passage through a human consciousness. Thought and emotion tend to crystallize into forms of beauty as inevitably, and according to the same laws, as does the frost on the window pane. Art, in one of its aspects, is the weaving of a pattern, the communication of an order and a method to lines, forms, colors, sounds. All very poetical, and possibly true, you may be saying to yourselves, but what has it to do with architecture, which nowadays, at least, is pre-eminently a practical and utilitarian art whose highest mission is to fulfill definite conditions in an economical and admirable way; whose supreme excellence is fitness, appropriateness, the perfect adaptation of means to ends, and the perfect expression of both means and ends? Yes, architecture is all of this, but this is not all of architecture; else the most efficient engineer would be the most admirable architect, which does not happen to be the case. Along with the expression of the concrete and individual must go the expression of the abstract and universal; the two can be combined in a single building in the same way that in every human countenance are combined a racial or temperamental *type*, which is universal, and a *character*, which is individual.

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